

CLAIMS

I claim:

1. A device for causing weight loss in obese humans comprising:
85 an implant that creates an intestinal bypass between a first region of intestine and a second region of intestine.
2. The weight loss device as recited in claim 1, wherein the implant comprises a valve mechanism that allows flow of food material only in one direction.
3. The weight loss device as recited in claim 1, wherein the implant is tubular.
- 90 4. The weight loss device as recited in claim 3, wherein the implant comprises an elastic mechanism to facilitate transfer of food material.
5. The weight loss device as recited in claim 3, wherein the implant comprises a series of projections on the inner surface of the implant to facilitate transfer of food material in one direction.
- 95 6. The weight loss device as recited in claim 3, wherein the walls of the implant are hollow and are filled with a filler material.
7. The weight loss device as recited in claim 1, wherein the implant comprises a ring that creates a direct physical connection between the first region of intestine and the second region of intestine.
- 100 8. The weight loss device as recited in claim 1, wherein the implant is connected to the intestine by biocompatible fasteners selected from the group comprising sutures, clips, staples, screws, tags and adhesives.
9. The weight loss device as recited in claim 1, wherein the implant comprises an adjustable opening to adjust the fraction of food material passing through the
105 intestinal bypass.
10. The weight loss device as recited in claim 9, wherein the size of the adjustable opening can be adjusted by endoscopic means.
11. The weight loss device as recited in claim 9, further comprising a control system

for adjusting the size of the adjustable opening; the control system comprising:

- 110 a. an external remote controller for transmitting electromagnetic signals,
wherein the electromagnetic signals contain information for adjusting the
size of the adjustable opening,
- b. a receiver for
 - i. receiving electromagnetic signals from the external remote
 - 115 controller and
 - ii. converting them to electrical signals,
- c. a control mechanism for
 - i. receiving electrical signals from the receiver and
 - ii. adjusting the size of the adjustable opening and
- 120 d. an energy storage mechanism for supplying energy to the receiver and the
control mechanism.

12. A device for causing weight loss in obese humans comprising:

an implant that creates an intestinal bypass between a first region of intestine and
a second region of intestine; wherein the implant comprises an adjustable
125 opening to adjust the fraction of food material passing through the intestinal
bypass.

13. The weight loss device as recited in claim 12, wherein the implant comprises a
valve mechanism that allows flow of food material only in one direction.

14. The weight loss device as recited in claim 12, wherein the implant is tubular.

130 15. The weight loss device as recited in claim 14, wherein the implant comprises an
elastic mechanism to facilitate transfer of food material.

16. The weight loss device as recited in claim 14, wherein the implant comprises a
series of projections on the inner surface of the implant to facilitate transfer of
food material in one direction.

135 17. The weight loss device as recited in claim 14, wherein the walls of the implant
are hollow and are filled with a filler material.

18. The weight loss device as recited in claim 12, wherein the implant comprises a

ring that creates a direct physical connection between the first region of intestine and the second region of intestine.

- 140 19. The weight loss device as recited in claim 12, wherein the implant is connected to the intestine by biocompatible fasteners selected from the group comprising sutures, clips, staples, screws, tags and adhesives.
20. The weight loss device as recited in claim 12, wherein the size of the adjustable opening can be adjusted by endoscopic means.
- 145 21. The weight loss device as recited in claim 12, further comprising a control system for adjusting the size of the adjustable opening; the control system comprising:
- a. an external remote controller for transmitting electromagnetic signals, wherein the electromagnetic signals contain information for adjusting the size of the adjustable opening,
 - 150 b. a receiver for
 - i. receiving electromagnetic signals from the external remote controller and
 - ii. converting them to electrical signals,
 - 155 c. a control mechanism for
 - i. receiving electrical signals from the receiver and
 - ii. adjusting the size of the adjustable opening and
 - d. an energy storage mechanism for supplying energy to the receiver and the control mechanism.
- 160 22. A device for causing weight loss in obese humans comprising:
an implant that creates an intestinal bypass between a first region of intestine and a second region of intestine; wherein the implant comprises:
- 1. an adjustable opening to adjust the fraction of food material passing through the intestinal bypass and
 - 165 2. a valve mechanism that allows flow of food material only in one direction.

23. The weight loss device as recited in claim 22, wherein the implant is tubular.
24. The weight loss device as recited in claim 23, wherein the implant comprises an elastic mechanism to facilitate transfer of food material.
- 170 25. The weight loss device as recited in claim 23, wherein the implant comprises a series of projections on the inner surface of the implant to facilitate transfer of food material in one direction.
26. The weight loss device as recited in claim 23, wherein the walls of the implant are hollow and are filled with a filler material.
- 175 27. The weight loss device as recited in claim 22, wherein the implant comprises a ring that creates a direct physical connection between the first region of intestine and the second region of intestine.
28. The weight loss device as recited in claim 22, wherein the implant is connected to the intestine by biocompatible fasteners selected from the group comprising sutures, clips, staples, screws, tags and adhesives.
- 180 29. The weight loss device as recited in claim 22, wherein the size of the adjustable opening can be adjusted by endoscopic means.
30. The weight loss device as recited in claim 22, further comprising a control system for adjusting the size of the adjustable opening; the control system comprising:
- 185 a. an external remote controller for transmitting electromagnetic signals, wherein the electromagnetic signals contain information for adjusting the size of the adjustable opening,
- b. a receiver for
- 190 i. receiving electromagnetic signals from the external remote controller and
- ii. converting them to electrical signals,
- c. a control mechanism for
- i. receiving electrical signals from the receiver and
- 195 ii. adjusting the size of the adjustable opening and

- d. an energy storage mechanism for supplying energy to the receiver and the control mechanism.

31. A method for causing weight loss in obese humans comprising the steps of:

- a. surgically creating an intestinal bypass with an adjustable opening, the intestinal bypass having an initial bypass opening size,
- b. calculating a time for a followup,
- c. calculating a desired weight loss of the patient till the followup,
- d. calculating a desired electrolyte balance of the patient,
- e. calculating actual weight loss and actual electrolyte balance during the followup,
- f. if the actual weight loss and the actual electrolyte balance match the desired weight loss and the desired electrolyte balance respectively:
 - i. calculating a time for a next followup,
 - ii. calculating a desired weight loss of the patient till the next followup, and
 - iii. calculating a desired electrolyte balance of the patient,else
 - i. calculating a new bypass opening size based on the desired weight loss, the actual weight loss, the desired electrolyte balance and the actual electrolyte balance,
 - ii. changing bypass opening size to the new bypass opening size,
 - iii. calculating a time for a followup,
 - iv. calculating a desired weight loss of the patient till the followup, and
 - v. calculating a desired electrolyte balance of the patient and
- g. repeating steps (e) through (f).

32. The method as recited in claim 31, wherein the method is used in conjunction with existing weight loss methods selected from the group comprising diet modification, exercise therapy and pharmacological therapy.

225 33. Obesity bypass device as recited in claim 1, wherein components are coated with
drugs such as antibiotics in order to reduce device related infections.